

Application No. 10/022,668

Docket No. 2001U013.US

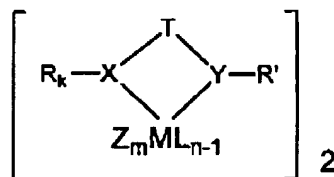
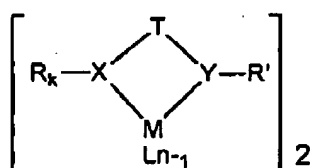
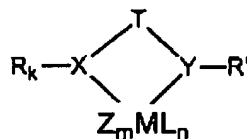
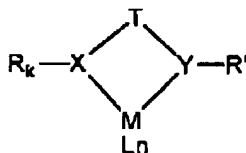
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Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A catalyst precursor composition selected from the group consisting of those represented by:



wherein T is a bridging group containing 2 or more bridging atoms;

M is a metallic element selected from Groups ~~1 to 15~~ 3 to 7 atoms and the

Lanthanide series of the Periodic Table of the Elements;

Z is a coordination ligand;

each L is a monovalent, bivalent, or trivalent anionic ligand;

n is an integer from 1 to 6;

m is an integer from 1 to 3;

k has the value of 2 when X is nitrogen or phosphorus, and k has the value of 1 when

X is oxygen or sulfur;

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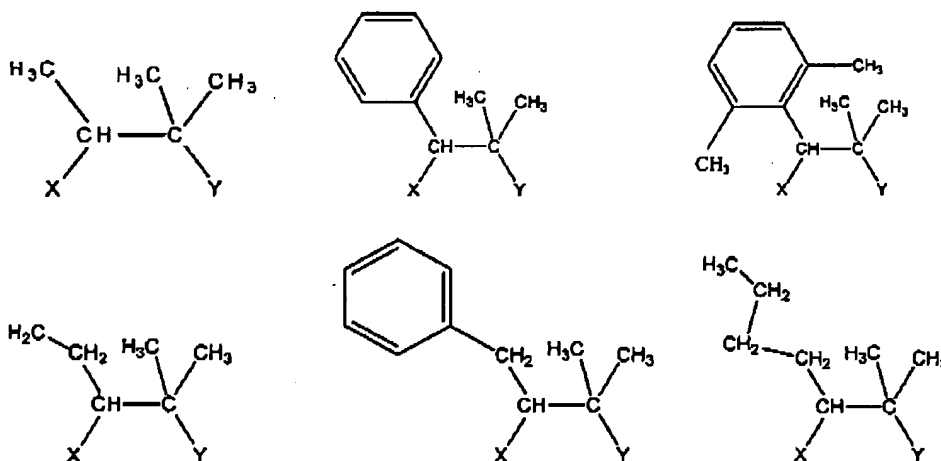
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X and Y are heteroatoms each independently selected from nitrogen, phosphorus, oxygen or sulfur;

R is a non-bulky substituent ~~that has relatively low steric hindrance with respect to the X substituent and is a~~ selected from straight or and branched chain alkyl groups; and

R' is a bulky substituent ~~with respect to Y and is~~ selected from alkyl, alkenyl, cycloalkyl, ~~heterocyclic (both heteroalkyl and heteroaryl);~~ alkylaryl, arylalkyl, and polymeric groups and heteroatom containing groups thereof; wherein there is branching within three atoms of Y and wherein R' comprises from 3 to 50 non-hydrogen atoms.

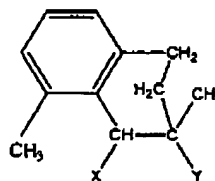
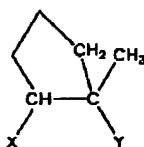
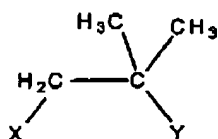
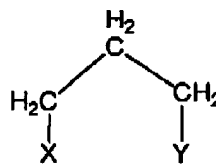
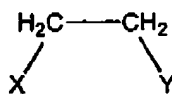
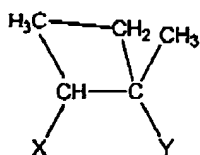
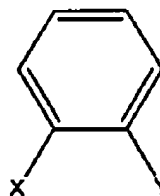
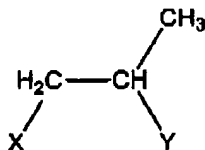
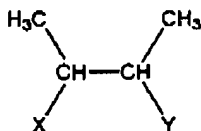
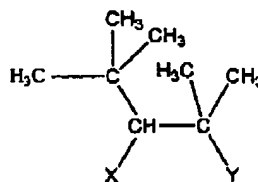
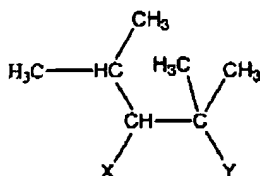
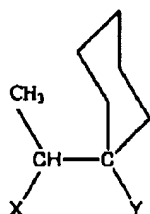
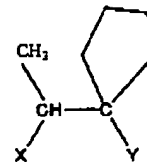
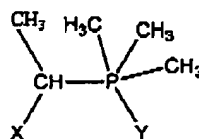
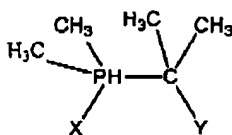
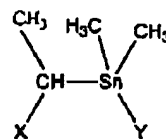
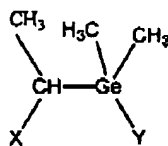
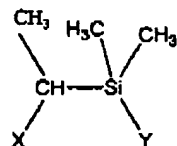
2. (Original) The catalyst precursor composition of claim 1 wherein at least one of the bridging atoms of T is a carbon atom and wherein T contains from about 1 to 50 non-hydrogen atoms.
3. (Original) The catalyst precursor composition of claim 1 wherein T contains a dimethyl group adjacent to Y.
4. (Original) The catalyst precursor composition of claim 1 wherein T is selected from the group consisting of:



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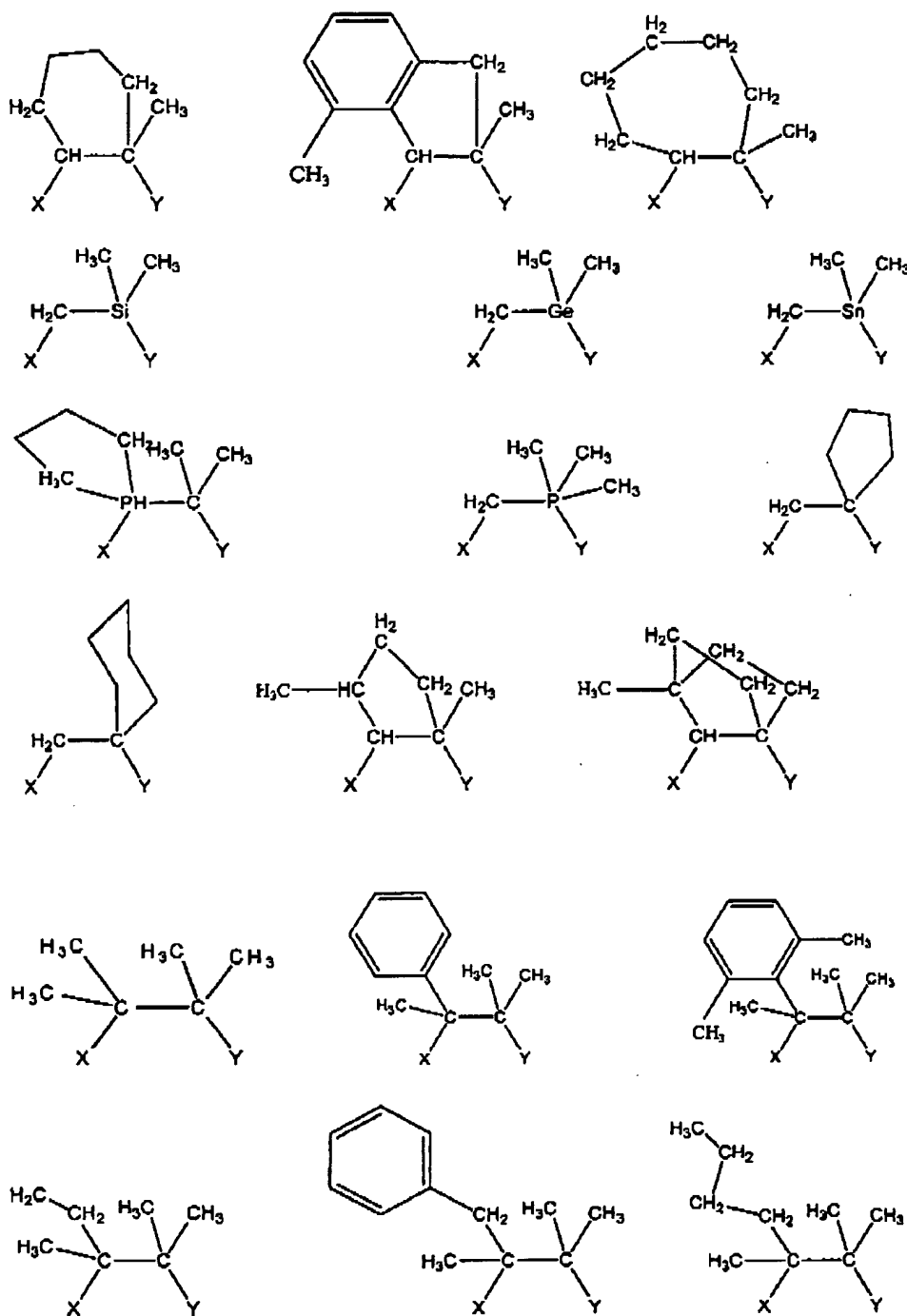
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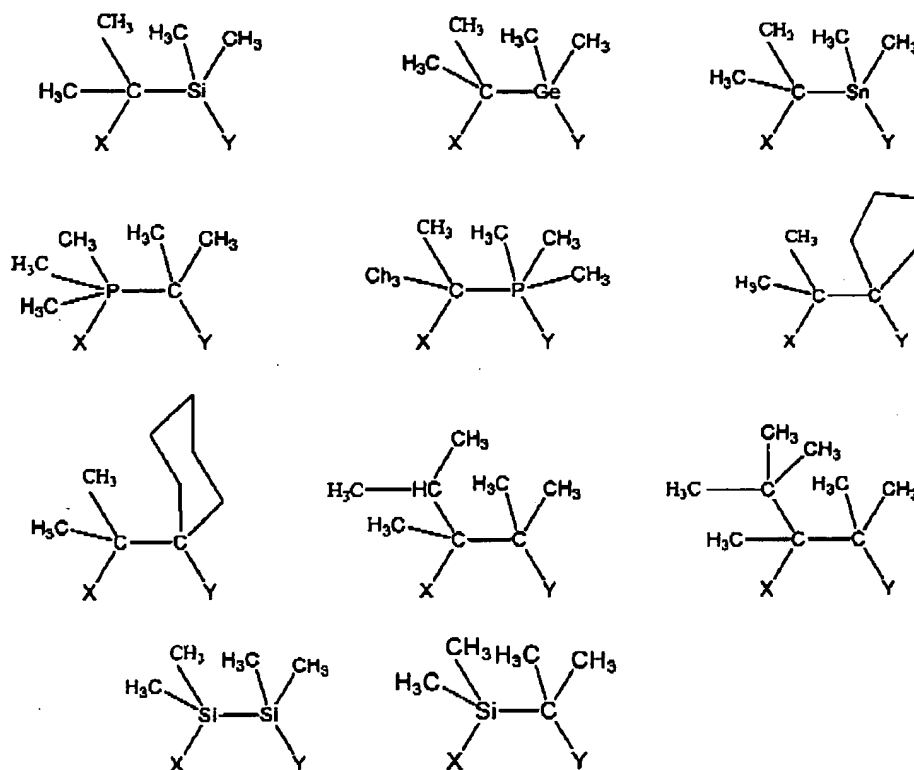
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wherein X and Y are provided for convenience and are not part of the bridging group.

5. (Currently amended) The catalyst precursor composition of claim 1 wherein Z is selected from at least one of triphenylphosphine, tris(C<sub>1</sub>-C<sub>6</sub> alkyl) phosphine, tricycloalkyl phosphine, diphenyl alkyl phosphine, dialkyl phenyl phosphine, trialkylamine, arylamine, a substituted or unsubstituted C<sub>2</sub> to C<sub>20</sub> alkene, an ester group, a C<sub>1</sub> to C<sub>4</sub> alkoxy group, an amine group, carboxylic acid, and di(C<sub>1</sub> to C<sub>3</sub>) alkyl ether, an  $\eta^4$  diene, tetrahydrofuran, and a nitrile.
6. (Original) The catalyst precursor composition of claim 1 wherein each L is an anionic ligand independently selected from those containing from about 1 to 50 non-hydrogen atoms and selected from the group consisting of halogen containing

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groups; hydrogen; alkyl; aryl; alkenyl; alkylaryl; arylalkyl; hydrocarboxy; amides, phosphides; sulfides; silyalkyls; diketones; borohydrides; and carboxylantes.

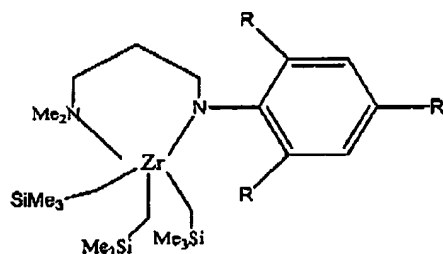
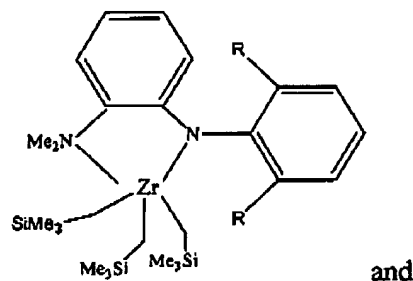
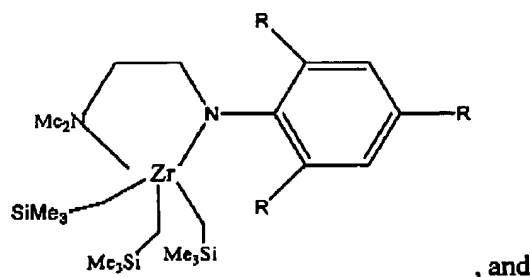
7. (Currently amended) The catalyst precursor ~~composition~~ composition of claim 1 wherein each L is an anionic ligand independently selected from those containing from about 1 to 20 non-hydrogen atoms and selected from the group consisting of alkyl, arylalkyl, and halogen containing groups.
8. (Original) The catalyst precursor composition of claim 1 wherein n is an integer from 1 to 4.
9. (Original) The catalyst precursor composition of claim 1 wherein both X and Y are nitrogen.
10. (Cancelled).
11. (Original) The catalyst precursor composition of claim 10 wherein R is a non-bulky C<sub>1</sub> to C<sub>20</sub> alkyl group.
12. (Original) The catalyst precursor composition of claim 11 wherein R is a C<sub>1</sub> to C<sub>10</sub> straight chain alkyl group.
13. (Original) The catalyst precursor composition of claim 1 wherein R' is selected from alkyl, alkenyl, cycloalkyl, heterocyclic, alkylaryl, arylalkyl, and polymeric.
14. (Original) The catalyst precursor composition of claim 13 wherein the R' substituent contains from about 3 to 50 non-hydrogen atoms.

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15. (Original) The catalyst precursor composition of claim 14 wherein the R' substituent has one or more of its carbon or hydrogen positions are substituted with an element selected from Groups 14 to 17 of the Periodic Table of the Elements.
16. (Original) The catalyst precursor composition of claim 1 having a formula selected from:

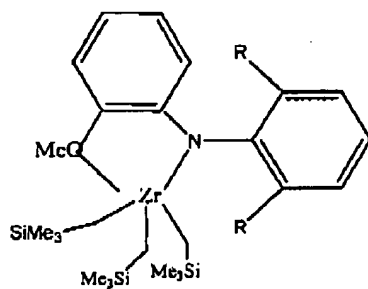
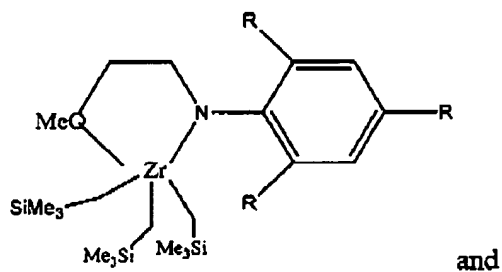


17. (Original) The catalyst precursor composition of claim 1 which is represented by a formula selected from:

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18-31 (Cancelled)